

**Abstract**

Techniques for processing power transistor devices are provided. In one aspect, the curvature of a power transistor device comprising a device film formed on a substrate is controlled by thinning the substrate, the device having an overall residual stress attributable at least in part to the thinning step, and applying a stress compensation layer to a surface of the device film, the stress compensation layer having a tensile stress sufficient to counterbalance at least a portion of the overall residual stress of the device. The resultant power transistor device may be part of an integrated circuit.